

REMARKS

In the Office Action mailed June 27, 2007 (hereinafter the "Office Action"), Claims 1-67 were rejected on the basis of non-statutory double patenting. Claim 49 was rejected under 35 U.S.C. § 112 as being indefinite. Claims 1-48, 50, and 53-67 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Aversa et al., Load Balancing a Cluster of Web Servers, Technical Report BUCS-TR-1999-01, Boston University, Computer Science Department, January 1999 (hereinafter "Aversa"), in view of Bruck et al., U.S. Patent No. 6,801,949 (hereinafter "Bruck"). Claims 49, 51, and 52 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Aversa in view of Bruck and Joffe et al., U.S. Patent No. 6,185,619 (hereinafter "Joffe"). Applicant respectfully traverses these rejections.

In response to the Office Action, Applicant has amended Claims 1, 2, 9, 10, 11, 13, 18, 19, 35, 39, 40, 42, 46, 49, 51, 54, and 57. Claims 1-67 remain pending in this application. Applicant has carefully considered the issues raised in the Office Action and respectfully requests reconsideration and allowance of the claims in view of the remarks set forth below.

Rejection Under 35 U.S.C. § 112

Claim 49 was rejected as being indefinite. While Applicant disagrees that the claim was indefinite, Applicant has amended the claim to address this rejection and respectfully asserts that withdrawal of this rejection is merited.

Rejection Based on Non-Statutory Double Patenting

Claims 1-67 were rejected on the ground of nonstatutory double patenting in view of Applicant's prior Application No. 09/872,332, now U.S. Patent No. 7,287,090. Applicant is not filing a terminal disclaimer with this response. Without conceding the propriety of the double patenting rejection, Applicant may be willing to advance prosecution in the future by filing a

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terminal disclaimer when the allowability of the claims in the present application is otherwise confirmed.

Rejections Based on Aversa in View of Bruck Under 35 U.S.C. § 103

Claims 1-17

With respect to Claim 1, the Office Action recited various portions of Aversa and Bruck as applying to the features of Claim 1. Applicant respectfully traverses this objection. Applicant respectfully submits that neither Aversa nor Bruck describes a first computing device capable of performing these tasks *autonomously* and *without invoking services of a host operating system*.

Aversa discloses a load-balancing system that distributes client requests among a collection of servers using a technique called Distributed Packet Rewriting. Aversa, p. 3. This system is described as being implemented via "two main components: one in kernel space and one in user space." Aversa, p. 5. One skilled in the art will understand that "kernel space" and "user space" are both parts of a host operating system. Therefore, Aversa does not teach performance of these tasks autonomously, without invoking services of a host operating system. In fact, Aversa teaches away from this, as it describes a system that *requires* the services of a host operating system.

Bruck discloses a load-balancing system that distributes client requests among a collection of back-end servers by using a front server layer and a back-end server layer. Bruck, Abstract. The distributed server functionality in Bruck is implemented via a "Daemon," a piece of software that runs on the server's CPU at the Application/Presentation layer. Bruck, col. 9, ln. 23-30; col. 10, ln. 28-34. One skilled in the art would recognize that running software on a server's CPU requires invoking services of the host operating system. Therefore, Bruck does not teach performance of these tasks autonomously, without invoking services of a host operating

system. In fact, Bruck teaches away from this, as it describes a system that *requires* the services of a host operating system.

Applicant thus respectfully submits that withdrawal of the 35 U.S.C. § 103(a) rejection with respect to Claim 1 is merited. Rejected Claims 2-17 depend from Claim 1. Applicant respectfully submits that Claims 2-17 are allowable at least by virtue of this dependency as well as by virtue of the other elements set forth therein.

For example, with respect to Claim 2, Applicant respectfully submits that Aversa does not disclose an embodiment in which the first computing device *is* a network interface card. While Applicant will agree that it is inherent to the operation of a networked server that it *contains* a network interface, Applicant respectfully submits that Aversa does not teach or suggest that the load balancing and packet forwarding tasks described in the present application are performed by a network interface card.

Further, with respect to Claims 9-11 and 13, Applicant respectfully submits that Aversa does not disclose a first computing device that is configured to perform the claimed operations *autonomously* and *without invoking services of a host operating system*. As discussed above with respect to Claim 1, Aversa teaches away from this element in that it describes a system that *requires* the services of a host operating system.

Accordingly, Applicant respectfully submits that Claims 1-17 are patentable over the cited prior art and respectfully requests withdrawal of the rejection of these claims under 35 U.S.C. § 103(a).

Claims 18-34 and 53

Independent Claim 18 was rejected "for similar reasons" as Claim 1. Office Action, para. 22. Applicant respectfully traverses this rejection. Applicant respectfully submits that, as argued above with respect to Claim 1, the prior art does not teach or suggest a first computing

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device that performs the method *autonomously* and *without invoking services of a host operating system*. Applicant thus submits that withdrawal of the 35 U.S.C. § 103(a) rejection with respect to Claim 18 is merited.

Rejected Claims 19-34 and 53 depend from Claim 18. Applicant submits that Claims 19-34 and 53 are allowable at least by virtue of this dependency as well as by virtue of the other elements set forth therein. For example, with respect to Claim 19, the prior art does not disclose a first computing device that *is* a network interface card, as argued above with respect to Claim 2. Accordingly, Applicant submits that Claims 18-34 and 53 are patentable over the cited prior art and respectfully requests withdrawal of the rejection of these claims under 35 U.S.C. § 103(a).

Claims 35-38

Independent Claim 35 was rejected "for similar reasons" as Claim 1. Applicant respectfully traverses this rejection. Applicant respectfully submits that, as argued above with respect to Claims 1 and 2, the prior art does not teach or suggest an *intelligent network interface device* that has a processor that is structured to perform the described actions *autonomously* and *without invoking services of a host operating system*. Applicant thus submits that withdrawal of the 35 U.S.C. § 103(a) rejection with respect to Claim 35 is merited.

Rejected Claims 36-38 depend from Claim 35. Applicant respectfully submits that Claims 36-38 are allowable at least by virtue of this dependency as well as by virtue of the other elements set forth therein. Accordingly, applicant submits that Claims 35-38 are patentable over the cited prior art and respectfully requests withdrawal of the rejection of these claims under 35 U.S.C. § 103(a).

Claims 39-41

Independent Claim 39 was rejected as being unpatentable over Aversa. Applicant respectfully traverses this rejection. Applicant respectfully submits that, as argued above with respect to Claim 1, the prior art does not teach or suggest a server farm where each server comprises a first computing device configured to *autonomously* and *without invoking services of a host operating system* perform the described client request redistribution. Applicant thus submits that withdrawal of the 35 U.S.C. § 103(a) rejection with respect to Claim 39 is merited.

Rejected Claim 40 depends from Claim 39. Applicant respectfully submits that Claim 40 is allowable at least by virtue of this dependency as well as by virtue of the other elements set forth therein. Specifically, the prior art does not teach or suggest a server farm further comprising a first router, coupled to the first server and configured to transmit client requests to the first server; a second router, coupled to the second server and configured to transmit a response to the client from the second server; *wherein the response to the client transmitted by the second server bypasses the first router*. Applicant respectfully submits that Aversa does not teach or suggest configuring a first router to receive client requests, and to configure a second router to transmit responses to the client, among other elements as claimed in Claim 40. Applicant thus submits that withdrawal of the 35 U.S.C. § 103(a) rejection with respect to Claim 40 is merited.

Rejected Claim 41 depends from Claim 39. Applicant submits that Claim 41 is allowable at least by virtue of this dependency as well as by virtue of the other elements set forth therein. Accordingly, Applicant submits that Claims 39-41 are patentable over the cited prior art and respectfully requests withdrawal of the rejection of these claims under 35 U.S.C. § 103(a).

Claims 42-45

Independent Claim 42 was rejected as being unpatentable over Aversa in view of Bruck, but without further explicit reasoning. Office Action, paras. 7, 26. Applicant respectfully traverses this rejection. Applicant respectfully submits that, as argued above with respect to Claim 1, the prior art does not teach or suggest a computer-readable memory medium containing instructions for controlling a computer processor in a server, where the processor is capable of selectively load balancing and directing network requests *autonomously* and *without invoking services of a host operating system*. Applicant thus submits that withdrawal of the 35 U.S.C. § 103(a) rejection with respect to Claim 42 is merited.

Rejected Claims 43-45 depend from Claim 42. Applicant respectfully submits that Claims 43-45 are allowable at least by virtue of this dependency as well as by virtue of the other elements set forth therein. Accordingly, Applicant submits that Claims 42-45 are patentable over the cited prior art and respectfully requests withdrawal of the rejection of these claims under 35 U.S.C. § 103(a).

Claims 46-48

Independent Claim 46 was rejected as being unpatentable over Aversa in view of Bruck, but without further explicit reasoning. Office Action, para. 7. Applicant respectfully traverses this rejection. Applicant respectfully submits that, as argued above with respect to Claim 1, the prior art does not teach or suggest a server comprising means capable of performing the described tasks *autonomously* and *without invoking services of a host operating system*. Applicant thus submits that withdrawal of the 35 U.S.C. § 103(a) rejection with respect to Claim 46 is merited.

Rejected Claims 47 and 48 depend from Claim 46. Applicant respectfully submits that Claims 47 and 48 are allowable at least by virtue of this dependency as well as by virtue of the

other elements set forth therein. Accordingly, Applicant submits that Claims 46-48 are patentable over the cited prior art and respectfully requests withdrawal of the rejection of these claims under 35 U.S.C. § 103(a).

Claims 54-56

Independent Claim 54 was rejected as being unpatentable over Aversa in view of Bruck, but without further explicit reasoning. Office Action, para. 28. Applicant respectfully traverses this rejection. Applicant respectfully submits that neither Aversa nor Bruck teaches or suggests *a fourth network configured to transmit responses to clients, bypassing portions of the first network*, among other elements recited in Claim 54. Applicant thus submits that withdrawal of the 35 U.S.C. § 103(a) rejection with respect to Claim 54 is merited.

Rejected Claims 55 and 56 depend from Claim 54. Applicant submits that Claims 55 and 56 are allowable at least by virtue of this dependency as well as by virtue of the other elements set forth therein. Accordingly, Applicant submits that Claims 54-56 are patentable over the cited prior art and respectfully requests withdrawal of the rejection of these claims under 35 U.S.C. § 103(a).

Claims 57-67

Independent Claim 57 was rejected as being unpatentable over Aversa in view of Bruck, but without further explicit reasoning. Office Action, para.28. Applicant respectfully traverses this rejection. Applicant respectfully submits that, as argued above with respect to Claim 1, the prior art does not teach or suggest a method of servicing client requests wherein the method is performed *autonomously and without invoking services of a host operating system*. Applicant thus submits that withdrawal of the 35 U.S.C. § 103(a) rejection with respect to Claim 57 is merited.

Rejected Claims 58-67 depend from Claim 57. Applicant respectfully submits that Claims 58-67 are allowable at least by virtue of this dependency as well as by virtue of the other elements set forth therein. Accordingly, Applicant submits that Claims 57-67 are patentable over the cited prior art and respectfully requests withdrawal of the rejection of these claims under 35 U.S.C. § 103(a).

Rejections Based on Aversa in View of Bruck and Joffe

Claims 49-52

Independent Claim 49 was rejected as being unpatentable over Aversa in view of Bruck and Joffe. In particular, the Office Action alleged that Aversa in view of Bruck discloses the invention substantively as described in Claim 49. Office Action, para. 29. Applicant respectfully traverses this objection. Applicant respectfully submits that the prior art does not teach or suggest outputting a *forwarded-request packet*, the forwarded request packet *encapsulating the request packet and including both a reference to the connection and a field in a header of the forwarded-request packet indicating that the forwarded-request packet is a forwarded packet*. The encapsulated packet as claimed is superior to IP-IP encapsulation, as it includes additional information that improves efficiency. See Specification, para. 248. Applicant thus submits that withdrawal of the 35 U.S.C. § 103(a) rejection with respect to Claim 49 is merited.

Rejected Claims 50-52 depend from Claim 49. Applicant respectfully submits that Claims 50-52 are allowable at least by virtue of this dependency as well as by virtue of the other elements set forth therein. For example, with respect to Claim 51, Applicant respectfully submits that Aversa in view of Bruck and Joffe does not teach or suggest the network interface card of the second computer system selectively creating and outputting the forwarded-request

packet to the network interface card of the first computer system *autonomously* and *without invoking services of a host operating system*.

Joffe discloses an information processing system that directs requests to replicated servers to meet the goals of a particular routing policy. Applicant submits that Joffe does not, however, disclose a network interface card that can do so *autonomously* and *without invoking services of a host operating system*. In fact, Joffe teaches away from this invention. Joffe discloses a system wherein the front-end component must make a request of a separate Director component in order to determine the server to which to direct the client. Joffe, col. 13, ln. 10-37. The Director component enlists the assistance of several other components in making this determination. Joffe, Fig. 4B. Once the determination is made, the front-end component, not the Director component, redirects the client connection. Joffe, col. 13, ln. 37-39. Indeed, the Office Action admitted that in Joffe, "the selection is done by the Director daemon." Office Action, para. 29, citing Joffe, col. 11, ln. 42-55. This teaches away from the Claim 51 of the present application, which does not require the assistance of other components in either making a determination of which server to direct the request to, or in so directing the request. Instead, the information processing system of Claim 51 operates *autonomously* and *without invoking services of a host operating system*.

Accordingly, Applicant respectfully submits that Claims 49-52 are patentable over the cited prior art and respectfully requests withdrawal of the rejection of these claims under 35 U.S.C. § 103(a).

CONCLUSION

In view of the foregoing remarks, Applicant submits that all claims are in patentable condition and respectfully requests an early notice to that effect. The Examiner is requested to contact applicant's attorney at the number provided below should any questions or issues remain.

Respectfully submitted,

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A handwritten signature in black ink, appearing to read "Kevan L. Morgan", is written over a vertical line.

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